

C++ 程式設計題

命題者：Chin-Fu , Yang

題目名稱(中文/英文)：Fraction

主要測試觀念： 找最大公因數，練習 class

Basics

Functions

- | | |
|--|---|
| <input checked="" type="checkbox"/> C++ BASICS 1
<input type="checkbox"/> FLOW OF CONTROL
<input checked="" type="checkbox"/> FUNCTION BASICS
<input type="checkbox"/> PARAMETERS AND OVERLOADING
<input type="checkbox"/> ARRAYS
<input checked="" type="checkbox"/> STRUCTURES AND CLASSES
<input type="checkbox"/> CONSTRUCTORS AND OTHER TOOLS
<input type="checkbox"/> OPERATOR OVERLOADING, FRIENDS, AND REFERENCES
<input type="checkbox"/> STRINGS
<input type="checkbox"/> POINTERS AND DYNAMIC ARRAYS | <input type="checkbox"/> SEPARATE COMPILATION AND NAMESPACES
<input type="checkbox"/> STREAMS AND FILE I/O
<input type="checkbox"/> RECURSION
<input type="checkbox"/> INHERITANCE
<input type="checkbox"/> POLYMORPHISM AND VIRTUAL FUNCTIONS
<input type="checkbox"/> TEMPLATES
<input type="checkbox"/> LINKED DATA STRUCTURES
<input type="checkbox"/> EXCEPTION HANDLING
<input type="checkbox"/> STANDARD TEMPLATE LIBRARY
<input type="checkbox"/> PATTERNS AND UML |
|--|---|

題目說明： Define a class for a type called Fraction. This class is used to represent a ratio of two integers. Include mutator function that allow the user to set numerator and the denominator. Also include a member function that returns the value of the numerator divided by the value of fraction reduced to lowest terms. For example, instead of outputting 20/60 the function should output 1/3. This will require finding the greatest common divisor for the numerator and denominator, and then dividing both by that number. Embed your class in a test program

輸入說明：

輸出說明：

I/O 範例：

	Sample Input	Sample Output
第一組測資與輸出	Input-main1.cpp	2 2 0.333333 1/3
第二組	Input-main2.cpp	250 250 0.0125 1/80 450 450 0.06 3/50

附屬資料：

☒解答程式：Fraction.cpp(檔名)

☒測試資料：input-main1.cpp, output1.txt, input-main2.cpp, output2.txt

☒ 易，僅需用到基礎程式設計語法與結構

☐ 中，需用到多項程式設計語法與結構

☐ 難，需用到多項程式結構或較為複雜之資料型態或結構

解題時間：10 分鐘。

其他註記：